

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (original) A gene fragment coding for a VH chain or a portion thereof of a human anti-human Monocyte chemoattractant protein-1 (hereinafter referred to as "human MCP-1") antibody that binds to human MCP-1 and inhibits the biological activity thereof.

2. (original) The gene fragment of claim 1 wherein complementarity determining regions (CDR1 to CDR3) of said VH chain have the following amino acid sequences:

CDR1: Ser Tyr Ala Ile Ser (SEQ ID NO: 3)

CDR2: Gly Phe Asp Pro Glu Asp Gly Glu Thr Ile Tyr Ala Gln
Lys Phe Gln Gly (SEQ ID NO: 4)

CDR3: Asp Leu Gly Gly Gly Asp Tyr Tyr Tyr Gly Met Asp Val
(SEQ ID NO: 5).

3. (currently amended) The gene fragment of claim 1 [[or 2]] wherein said VH chain has the amino acid sequence depicted in SEQ ID NO: 2 or the amino acid sequence depicted in SEQ ID NO: 2 in which one or several amino acids are deleted, substituted or added.

4. (original) The gene fragment of claim 3 wherein said VH chain has the amino acid sequence depicted in SEQ ID NO: 2.

5. (original) A gene fragment coding for a VL chain or a portion thereof of a human MCP-1 antibody that binds to human MCP-1 and inhibits the biological activity thereof.

6. (original) The gene fragment of claim 5 wherein complementarity determining regions (CDR1 to CDR3) of said VL chain have the following amino acid sequences:

CDR1: Arg Ser Ser Gln Ser Ile Asn Thr Tyr Leu His (SEQ ID NO: 8)

CDR2: Ala Ala Ser Thr Leu Gln Ser (SEQ ID NO: 9)

CDR3: Gln Gln Ser Phe Thr Thr Pro Leu Thr (SEQ ID NO: 10).

7. (currently amended) The gene fragment of claim 5 [[or 6]] wherein said VL chain has the amino acid sequence depicted in SEQ ID NO: 7 or the amino acid sequence depicted in SEQ ID NO: 7 in which one or several amino acids are deleted, substituted or added.

8. (original) The gene fragment of claim 7 wherein said VL chain has the amino acid sequence depicted in SEQ ID NO: 7.

9. (currently amended) A gene fragment coding for a single chain Fv (hereinafter referred to as "scFv") of a human anti-human MCP-1 antibody that binds to human MCP-1 and inhibits

the biological activity thereof, said gene fragment consisting of ~~[[the]] a gene fragment coding for [[the]] a VH chain of any one of claims 1 to 4 said human anti-human MCP-1 antibody~~ combined with ~~[[the]] a gene fragment coding for [[the]] a VL chain of any one of claims 5 to 8 said human anti-human MCP-1 antibody.~~

10. (currently amended) A gene fragment coding for a human anti-human MCP-1 antibody that binds to human MCP-1 and inhibits the biological activity thereof, said gene fragment consisting of ~~[[the]] a gene fragment coding for [[the]] a VH chain of any one of claims 1 to 4 said human anti-human MCP-1 antibody~~ combined with a human antibody CH chain gene and ~~[[the]] a gene fragment coding for [[the]] a VL chain of any one of claims 5 to 8 said human anti-human MCP-1 antibody~~ combined with a human antibody CL chain gene.

11. (currently amended) A gene fragment coding for a human anti-human MCP-1 antibody fragment that binds to human MCP-1 and inhibits the biological activity thereof, said gene fragment consisting of the gene fragment coding for the VH chain of ~~any one of claims 1 to 4 said human anti-human MCP-1 antibody~~ combined with a portion of a human antibody CH chain gene and ~~[[the]] a gene fragment coding for [[the]] a VL chain of any one of claims 5 to 8 said human anti-human MCP-1~~

antibody combined with a portion of a human antibody CL chain gene.

12. (original) The gene fragment of claim 11 wherein said antibody fragment is selected from Fab, Fab' or F(ab')₂.

13. (original) A gene fragment coding for a human anti-human MCP-1 antibody fragment that binds to human MCP-1 and inhibits the biological activity thereof, said gene fragment consisting of the scFv gene fragment of claim 9 combined with either a portion of a human antibody CH chain gene or with a portion of a human antibody CL chain gene.

14. (currently amended) A human anti-human MCP-1 antibody that binds to human MCP-1 and inhibits the biological activity thereof or a fragment of said antibody, which is expressed by the genetic recombination technique from an expression vector in which the gene fragment of ~~any one of claims 1 to 13~~ claim 10 is incorporated.

15. (currently amended) A modified protein molecule consisting of the human anti-human MCP-1 antibody ~~or a fragment of said antibody of claim 14~~ to which a high molecular weight modifying agent is bound.

16. (currently amended) An agent for inhibiting the activity of human MCP-1 comprising as an active ingredient the human

~~anti-human MCP-1 antibody or a fragment of said antibody of claim 14 or the modified protein molecule of claim 15.~~

17. (original) A medicament for preventing or treating inflammation and immunopathy caused by human MCP-1, said medicament utilizing the agent for inhibiting the activity of human MCP-1 of claim 16.

18. (new) The gene fragment of claim 9 wherein complementarity determining regions (CDR1 to CDR3) of said VH chain have the following amino acid sequences:

CDR1: Ser Tyr Ala Ile Ser (SEQ ID NO: 3)

CDR2: Gly Phe Asp Pro Glu Asp Gly Glu Thr Ile Tyr Ala Gln
Lys Phe Gln Gly (SEQ ID NO: 4)

CDR3: Asp Leu Gly Gly Gly Asp Tyr Tyr Tyr Gly Met Asp Val
(SEQ ID NO: 5)

and/or complementarity determining regions (CDR1 to CDR3) of said VL chain have the following amino acid sequences:

CDR1: Arg Ser Ser Gln Ser Ile Asn Thr Tyr Leu His (SEQ ID
NO: 8)

CDR2: Ala Ala Ser Thr Leu Gln Ser (SEQ ID NO: 9)

CDR3: Gln Gln Ser Phe Thr Thr Pro Leu Thr (SEQ ID NO: 10).

19. (new) The gene fragment of claim 9 wherein said VH chain has an amino acid sequence depicted in SEQ ID NO: 2 or the amino acid sequence depicted in SEQ ID NO: 2 in which one or

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several amino acids are deleted, substituted or added and/or said VL chain has the amino acid sequence depicted in SEQ ID NO: 7 or the amino acid sequence depicted in SEQ ID NO: 7 in which one or several amino acids are deleted, substituted or added.

20. (new) The gene fragment of claim 19 wherein said CH chain has the amino acid sequence depicted in SEQ ID NO: 2 and/or said VL chain has the amino acid sequence depicted in SEQ ID NO: 7.

21. (new) The gene fragment of claim 10 wherein complementarity determining regions (CDR1 to CDR3) of said VH chain have the following amino acid sequences:

CDR1: Ser Tyr Ala Ile Ser (SEQ ID NO: 3)

CDR2: Gly Phe Asp Pro Glu Asp Gly Glu Thr Ile Tyr Ala Gln
Lys Phe Gln Gly (SEQ ID NO: 4)

CDR3: Asp Leu Gly Gly Gly Asp Tyr Tyr Tyr Gly Met Asp Val
(SEQ ID NO: 5)

and/or complementarity determining regions (CDR1 to CDR3) of said VL chain have the following amino acid sequences:

CDR1: Arg Ser Ser Gln Ser Ile Asn Thr Tyr Leu His (SEQ ID
NO: 8)

CDR2: Ala Ala Ser Thr Leu Gln Ser (SEQ ID NO: 9)

CDR3: Gln Gln Ser Phe Thr Thr Pro Leu Thr (SEQ ID NO: 10).

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22. (new) The gene fragment of claim 10 wherein said VH chain has an amino acid sequence depicted in SEQ ID NO: 2 or the amino acid sequence depicted in SEQ ID NO: 2 in which one or several amino acids are deleted, substituted or added and/or said VL chain has the amino acid sequence depicted in SEQ ID NO: 7 or the amino acid sequence depicted in SEQ ID NO: 7 in which one or several amino acids are deleted, substituted or added.

23. (new) The gene fragment of claim 22 wherein said CH chain has the amino acid sequence depicted in SEQ ID NO: 2 and/or said VL chain has the amino acid sequence depicted in SEQ ID NO: 7.

24. (new) The gene fragment of claim 11 wherein complementarity determining regions (CDR1 to CDR3) of said VH chain have the following amino acid sequences:

CDR1: Ser Tyr Ala Ile Ser (SEQ ID NO: 3)

CDR2: Gly Phe Asp Pro Glu Asp Gly Glu Thr Ile Tyr Ala Gln
Lys Phe Gln Gly (SEQ ID NO: 4)

CDR3: Asp Leu Gly Gly Gly Asp Tyr Tyr Tyr Gly Met Asp Val
(SEQ ID NO: 5)

and/or complementarity determining regions (CDR1 to CDR3) of said VL chain have the following amino acid sequences:

CDR1: Arg Ser Ser Gln Ser Ile Asn Thr Tyr Leu His (SEQ ID

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NO: 8)

CDR2: Ala Ala Ser Thr Leu Gln Ser (SEQ ID NO: 9)

CDR3: Gln Gln Ser Phe Thr Thr Pro Leu Thr (SEQ ID NO: 10).

25. (new) The gene fragment of claim 11 wherein said VH chain has an amino acid sequence depicted in SEQ ID NO: 2 or the amino acid sequence depicted in SEQ ID NO: 2 in which one or several amino acids are deleted, substituted or added and/or said VL chain has the amino acid sequence depicted in SEQ ID NO: 7 or the amino acid sequence depicted in SEQ ID NO: 7 in which one or several amino acids are deleted, substituted or added.

26. (new) The gene fragment of claim 25 wherein said CH chain has the amino acid sequence depicted in SEQ ID NO: 2 and/or said VL chain has the amino acid sequence depicted in SEQ ID NO: 7.

27. (new) The gene fragment of claim 13 wherein complementarity determining regions (CDR1 to CDR3) of said VH chain have the following amino acid sequences:

CDR1: Ser Tyr Ala Ile Ser (SEQ ID NO: 3)

CDR2: Gly Phe Asp Pro Glu Asp Gly Glu Thr Ile Tyr Ala Gln
Lys Phe Gln Gly (SEQ ID NO: 4)

CDR3: Asp Leu Gly Gly Gly Asp Tyr Tyr Tyr Gly Met Asp Val
(SEQ ID NO: 5)

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and/or complementarity determining regions (CDR1 to CDR3) of said VL chain have the following amino acid sequences:

CDR1: Arg Ser Ser Gln Ser Ile Asn Thr Tyr Leu His (SEQ ID NO: 8)

CDR2: Ala Ala Ser Thr Leu Gln Ser (SEQ ID NO: 9)

CDR3: Gln Gln Ser Phe Thr Thr Pro Leu Thr (SEQ ID NO: 10).

28. (new) The gene fragment of claim 13 wherein said VH chain has an amino acid sequence depicted in SEQ ID NO: 2 or the amino acid sequence depicted in SEQ ID NO: 2 in which one or several amino acids are deleted, substituted or added and/or said VL chain has the amino acid sequence depicted in SEQ ID NO: 7 or the amino acid sequence depicted in SEQ ID NO: 7 in which one or several amino acids are deleted, substituted or added.

29. (new) The gene fragment of claim 28 wherein said CH chain has the amino acid sequence depicted in SEQ ID NO: 2 and/or said VL chain has the amino acid sequence depicted in SEQ ID NO: 7.

30. (new) An agent for inhibiting the activity of human MCP-1 comprising as an active ingredient the modified protein molecule of claim 15.

31. (new) A medicament for preventing or treating inflammation and immunopathy caused by human MCP-1, said medicament

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utilizing the agent for inhibiting the activity of human MCP-1 of claim 30.

32. (new) The human anti-human MCP-1 antibody of claim 14 wherein complementarity determining regions (CDR1 to CDR3) of said VH chain of said gene fragment have the following amino acid sequences:

CDR1: Ser Tyr Ala Ile Ser (SEQ ID NO: 3)

CDR2: Gly Phe Asp Pro Glu Asp Gly Glu Thr Ile Tyr Ala Gln
Lys Phe Gln Gly (SEQ ID NO: 4)

CDR3: Asp Leu Gly Gly Gly Asp Tyr Tyr Tyr Gly Met Asp Val
(SEQ ID NO: 5)

and/or complementarity determining regions (CDR1 to CDR3) of said VL chain of said gene fragment have the following amino acid sequences:

CDR1: Arg Ser Ser Gln Ser Ile Asn Thr Tyr Leu His (SEQ ID
NO: 8)

CDR2: Ala Ala Ser Thr Leu Gln Ser (SEQ ID NO: 9)

CDR3: Gln Gln Ser Phe Thr Thr Pro Leu Thr (SEQ ID NO: 10).

33. (new) The human anti-human MCP-1 antibody of claim 14, wherein said VH chain of said gene fragment has an amino acid sequence depicted in SEQ ID NO: 2 or the amino acid sequence depicted in SEQ ID NO: 2 in which one or several amino acids are deleted, substituted or added and/or said VL chain of said

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gene fragment has the amino acid sequence depicted in SEQ ID NO: 7 or the amino acid sequence depicted in SEQ ID NO: 7 in which one or several amino acids are deleted, substituted or added.

34. (new) The human anti-human MCP-1 antibody of claim 33, wherein said VH chain has the amino acid sequence depicted in SEQ ID NO: 2 and/or said VL chain has the amino acid sequence depicted in SEQ ID NO: 7.

35. (new) A human anti-human MCP-1 antibody fragment that binds to human MCP-1 and inhibits the biological activity thereof, which is expressed by the genetic recombination technique from an expression vector in which the gene fragment of claim 11 is incorporated.

36. (new) The human anti-human MCP-1 antibody fragment of claim 35, wherein said antibody fragment is selected from Fab, Fab' or F(ab')₂.

37. (new) The human anti-human MCP-1 antibody fragment of claim 35, wherein complementarity determining regions (CDR1 to CDR3) of said VH chain of said gene fragment have the following amino acid sequences:

CDR1: Ser Tyr Ala Ile Ser (SEQ ID NO: 3)

CDR2: Gly Phe Asp Pro Glu Asp Gly Glu Thr Ile Tyr Ala Gln
Lys Phe Gln Gly (SEQ ID NO: 4)

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CDR3: Asp Leu Gly Gly Gly Asp Tyr Tyr Tyr Gly Met Asp Val

(SEQ ID NO: 5)

and/or complementarity determining regions (CDR1 to CDR3) of said VL chain of said gene fragment have the following amino acid sequences:

CDR1: Arg Ser Ser Gln Ser Ile Asn Thr Tyr Leu His (SEQ ID

NO: 8)

CDR2: Ala Ala Ser Thr Leu Gln Ser (SEQ ID NO: 9)

CDR3: Gln Gln Ser Phe Thr Thr Pro Leu Thr (SEQ ID NO: 10).

38. (new) The human anti-human MCP-1 antibody fragment of claim 35, wherein said VH chain of said gene fragment has an amino acid sequence depicted in SEQ ID NO: 2 or the amino acid sequence depicted in SEQ ID NO: 2 in which one or several amino acids are deleted, substituted or added and/or said VL chain of said gene fragment has the amino acid sequence depicted in SEQ ID NO: 7 or the amino acid sequence depicted in SEQ ID NO: 7 in which one or several amino acids are deleted, substituted or added.

39. (new) The human anti-human MCP-1 antibody fragment of claim 38, wherein said VH chain has the amino acid sequence depicted in SEQ ID NO: 2 and/or said VL chain has the amino acid sequence depicted in SEQ ID NO: 7.

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40. (new) A modified protein molecule consisting of the human anti-human MCP-1 antibody fragment of claim 35 to which a high molecular weight modifying agent is bound.

41. (new) An agent for inhibiting the activity of human MCP-1 comprising as an active ingredient the human anti-human MCP-1 antibody fragment of claim 35.

42. (new) A medicament for preventing or treating inflammation and immunopathy caused by human MCP-1, said medicament utilizing the agent for inhibiting the activity of human MCP-1 of claim 41.

43. (new) An agent for inhibiting the activity of human MCP-1 comprising as an active ingredient the modified protein molecule of claim 40.

44. (new) A medicament for preventing or treating inflammation and immunopathy caused by human MCP-1, said medicament utilizing the agent for inhibiting the activity of human MCP-1 of claim 43.

45. (new) A human anti-human MCP-1 antibody fragment that binds to human MCP-1 and inhibits the biological activity thereof, which is expressed by the genetic recombination technique from an expression vector in which the gene fragment of claim 13 is incorporated.

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46. (new) The human anti-human MCP-1 antibody fragment of claim 45, wherein complementarity determining regions (CDR1 to CDR3) of said VH chain of said gene fragment have the following amino acid sequences:

CDR1: Ser Tyr Ala Ile Ser (SEQ ID NO: 3)

CDR2: Gly Phe Asp Pro Glu Asp Gly Glu Thr Ile Tyr Ala Gln
Lys Phe Gln Gly (SEQ ID NO: 4)

CDR3: Asp Leu Gly Gly Gly Asp Tyr Tyr Tyr Gly Met Asp Val
(SEQ ID NO: 5)

and/or complementarity determining regions (CDR1 to CDR3) of said VL chain of said gene fragment have the following amino acid sequences:

CDR1: Arg Ser Ser Gln Ser Ile Asn Thr Tyr Leu His (SEQ ID
NO: 8)

CDR2: Ala Ala Ser Thr Leu Gln Ser (SEQ ID NO: 9)

CDR3: Gln Gln Ser Phe Thr Thr Pro Leu Thr (SEQ ID NO: 10).

47. (new) The human anti-human MCP-1 antibody fragment of claim 45, wherein said VH chain of said gene fragment has an amino acid sequence depicted in SEQ ID NO: 2 or the amino acid sequence depicted in SEQ ID NO: 2 in which one or several amino acids are deleted, substituted or added and/or said VL chain of said gene fragment has the amino acid sequence depicted in SEQ ID NO: 7 or the amino acid sequence depicted

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in SEQ ID NO: 7 in which one or several amino acids are deleted, substituted or added.

48. (new) The human anti-human MCP-1 antibody fragment of claim 47, wherein said VH chain has the amino acid sequence depicted in SEQ ID NO: 2 and/or said VL chain has the amino acid sequence depicted in SEQ ID NO: 7.

49. (new) A modified protein molecule consisting of the human anti-human MCP-1 antibody fragment of claim 45 to which a high molecular weight modifying agent is bound.

50. (new) An agent for inhibiting the activity of human MCP-1 comprising as an active ingredient the human anti-human MCP-1 antibody fragment of claim 45.

51. (new) A medicament for preventing or treating inflammation and immunopathy caused by human MCP-1, said medicament utilizing the agent for inhibiting the activity of human MCP-1 of claim 50.

52. (new) An agent for inhibiting the activity of human MCP-1 comprising as an active ingredient the modified protein molecule of claim 49.

53. (new) A medicament for preventing or treating inflammation and immunopathy caused by human MCP-1, said

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medicament utilizing the agent for inhibiting the activity of human MCP-1 of claim 52.